WEEDS and TURF PEST CONTROL

A SECTION OF PEST CONTROL MAGAZINE

JULY 1962

A Guest Editorial by 1961-1962 President of the Northeastern Weed Control Conference

DR. LAWRENCE G. SOUTHWICK

Dow Chemical Co., Midland, Mich.

New Section Answer to Industry Demand for Weed, Turf Data

Control of unwanted vegetation is one of the oldest activities of man, yet the techniques and concepts in general use today are based largely on relatively recent developments. New herbicide discoveries, better knowledge of herbicidal action and selectivity, new concepts in application methods and equipment — all are contributing to an expanding and a more complex industry.

As is usual when a science develops rapidly and practical application becomes more economically profitable, getting the right information to the right people at the right time assumes increasing importance. This is certainly true with regard to applicators, who need up-to-date use-information, presented clearly, concisely, and correctly to suit the speedy pace of modern American business.

This new section of *Pest Control* magazine will

(*Continued on page W-20*)

Multibillion Dollar Weed, Turf Market Awaits Informed Diligent Applicator

By J. C. REDD

President, Redd Industrial Services, Jackson, Mississippi

Past President, National Pest Control Association

ONE OF the best ways for a contract applicator to grow, other than by selling more of his present services, is to add new ones. This is why so many pest control operators, and owners of similar service businesses, have expanded into weed control and turf spraying over the past decade.

Applicators who want to incorporate other pursuits into their present line should make sure their new venture is closely related to the one they're now engaged in. If not, they will have to set up entirely new organizations and consequently defeat their objective: to expand logically and profitably.

PCOs, particularly, want to use their equipment, personnel, and field-gained know-how for additional, related activities. For this reason, many of them have jumped into the booming demand for industrial weed control, and contract turf spraying.

Few markets look more promising right now. Homeowners tend to build $50,000 houses, spend $10,000 decorating inside, and yet only $100 on their lawn and landscape. These folks have not yet been taught that more people see the outside than the inside of their homes. They have not yet been convinced that the outside should have first attention.

Applicators can offer these homeowners a variety of services. Control of such nuisances as chinch bugs, fire ants, fungus, moles, white grubs, fleas, ticks, chiggers, fall army worms, and

Lawn pest control is an important facet of author Redd's business. These Reddmen are treating both grass and ornamentals around a home in Jackson, Miss. Redd is active in industrial weed control, as well as general structural pest control.

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In this article, veteran weed controller J. C. Redd, of Jackson, Miss., shares his background with the novice contract applicator.

other pests in season, can be conducted with the same personnel and equipment presently used for general pest control.

In most cases, the homeowner himself can't take care of these lawn pests. He seeks an organization which can successfully and economically get rid of the invaders in his lawn, whether they're insects, weeds, or diseases.

The luxurious growth of most shrubs and ornamentals, and the treatment of lawn pests, usually require sprayers and applicators with high volume and pressure. Homeowners can no longer get control with hand or knapsack sprayers.

Moreover, contract applicators generally offer control of lawn insects and weeds, such as crabgrass, for less than the customer would spend to do it himself. And the chances of failure are greatly reduced when a professional does the job.

Profits in Weed Control

Chemical weed control is another service which is making money for a lot of operators. There are opportunities to control weeds around buildings, parking lots, drive-in theatres, junk yards, fence rows, walkways, lumber yards, and other such sites. After the applicator gains basic knowledge, he may want to go after the big jobs too, such as oil wells, refineries, tank batteries, flow lines, and large industrial plants. Eventually, the ambitious weed controller will tackle railway rights-of-way, utility lines, and turnpikes.

Obviously, there are different degrees of weed control, ranging from the small job trimming borders of walks with chemical and sprinkler can, to large contracts where an entire soil area is to be sterilized. Cost to the consumer may range from $5 to $10,000.

Some typical charges for weed and turf pest control are shown in Figure 1.

Equipment can be as simple as the sprinkler can, or as expensive as high capacity hydraulic sprayers and blowers. "Trial and error" experience from small jobs will help the applicator get ready for the big ones.

PCOs have noticed many of their regular household pest control customers are beginning to see how important it is to also include turf insect and disease control. This is especially true in the South. It is predicted that in the future few jobs will be taken without including turf pest control with the home contract.

Monthly weed control is different. For it to reach the same degree of permanency, customers have to be convinced:

(1) that the work can be done satisfactorily,

(2) that the fee is reasonable and economical, and

(3) that the work must be done on a regular, sustaining basis to achieve desired results.

Pricing Method

Structural pest control operators considering weed control will have to look at pricing practices. To arrive at a true and just comparison, compare these two types of services on a material and labor basis, using the same time unit.

Normally, more income per job is expected from weed and turf accounts for the same unit of time because there is not yet enough volume in vegetation control to benefit from lower costs.

Managers often use costs of labor and materials to decide if a job is profitable. Labor and goods should not exceed 40% of the price charged. For example, if labor costs 30%, then materials should not run over 10%. Or, if materials came to 16%, then labor should not be more than 24% of the price charged.

Let's compare the income and profit of a 2-man crew working on a weed job with one working for the same length of time on a termite job. On a weed job, a 2-man crew working one day should bring in a minimum of $500. After the initial treatment, follow-up service usually requires at least 3 visits which, altogether, should take about as much time and material as the original application. Thus such a job would require 2 crew days at $32 per day, or $64 for the job. Normally, materials cost between 15 and 20% of the total price, or about $100 in this case. Labor and materials for this kind

(*Continued on page W-18*)

Figure 1. Sample Charges for Outdoor Services

Turf Pest Control

	Season Control	After July 31
1,000 to 10,000 sq. ft.	$7.00 per 1,000 sq. ft.	$4.00 per 1,000 sq. ft.
10,000 to 50,000 sq. ft.	$5.00 per 1,000 sq. ft.	$3.00 per 1,000 sq. ft.

Weed Control

500 to 1,000 sq. ft.	2 to 3¢ per square ft.
5,000 to 10,000 sq. ft.	0.8 to 1.5¢ per square ft.
Industrial Sites of acre or more:	1st year — 0.8 to 1.5¢ 2nd year — 0.6 to 1.0¢ 3rd year — and up — 0.5 to 0.8¢

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Hyvar: New Weed Killer Designed For Industrial Sites

By L. A. CONN

Industrial and Biochemicals Department
E. I. duPont de Nemours and Co., Wilmington, Del.

A NEW CHEMICAL weapon has been added to the commercial applicator's arsenal of materials to control vegetation on industrial sites. Called Hyvar weed killer, it is a soil sterilant developed by Du Pont. It represents a new class of highly active organic herbicides for vegetation control, and is particularly useful for long-term general weed control on industrial areas where grasses are the main problem. Field studies have shown it to be in the range of 2 to 5 times more active against hard-to-kill grasses such as Johnson, Bermuda, nut, and quack grasses, than soil sterilants presently in use. Furthermore, it performs consistently on a broad range of soil types, because it is less subject to adsorption on soil colloids than many herbicides. Although it is not in full production, supplies are available for commercial trials this year.

Like Du Pont's Telvar monuron weed killer and Karmex diuron weed killer, Hyvar is formulated as a wettable powder. It can be mixed with water or herbicidal oil and applied with any equipment suitable for soil application of a wettable powder spray mixture. Generally a fixed-boom power sprayer is recommended, because with proper calibration it will give a constant rate of application. However, it can be applied with hand-operated guns on hose lines, or (for small areas) with a knapsack sprayer or sprinkling can.

The vegetation problems for which Hyvar weed killer is recommended, and the rates, are:

Annual Weeds and Grasses

4 to 8 pounds per acre — For such species as foxtail, crabgrass, cheatgrass, wild oats, bromegrass, ryegrass, pigweed, ragweed, purslane, wild mustard, cocklebur, and lambsquarters.

Perennial Grasses

5 to 15 pounds per acre — For such species as quackgrass, bluegrass, smooth brome, and bromesedge.

15 to 25 pounds per acre — For hard-to-kill species such as Johnson grass, Bermuda grass, and nutgrass.

Perennial Broadleaf Weeds

10 to 15 pounds per acre — For such species as dock, wild carrot, sheep sorrel, plantain, and dandelion.

15 to 25 pounds per acre — For hard-to-kill species such as bouncing bet, spurge, dogbane, goldenrod, daisies, and asters.

(The higher levels of ranges given above should be used on very adsorptive soils — usually those high in organic matter or carbon.)

The new family of chemicals from which Hyvar was developed is designated as substituted uracils. Hyvar is based on 5-bromo-3-isopropyl-6-methyl uracil. This family of compounds promises to provide interesting candidates for a variety of herbicidal applications. Several other substituted uracil compounds are in various stages of testing by Du Pont.

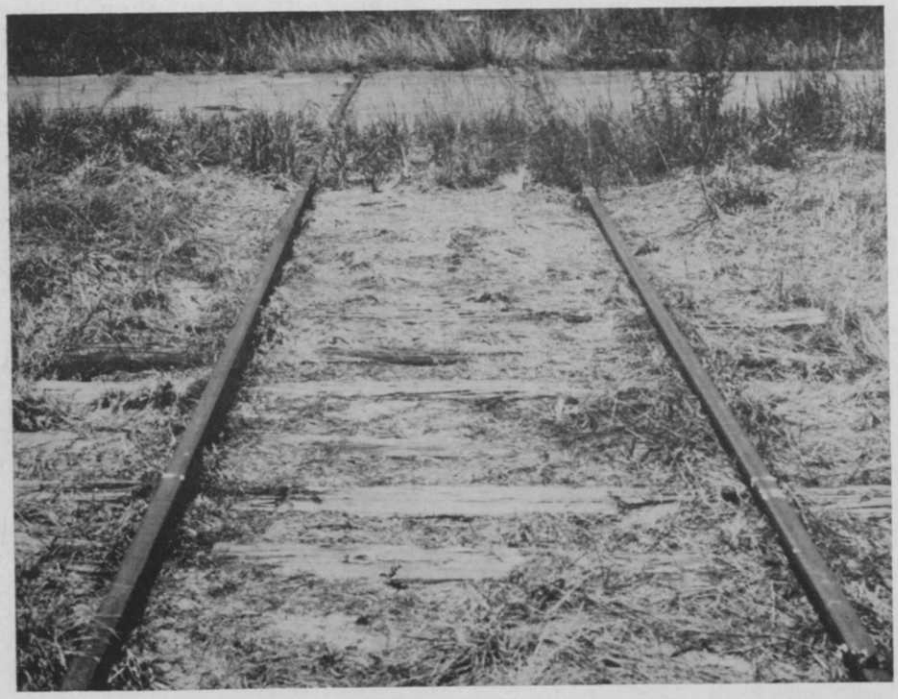
Hyvar is nonvolatile, nonflammable, and low in toxicity to people and animals under recommended conditions for use.

Wettable powder herbicides, such as Hyvar, can be used in most hydraulic sprayers provided all screens and strainers are at least 50-mesh, but continuous agitation is required to keep them from settling out. Mechanical agitation is preferred, but a "jet agitator" in the bottom of the tank can provide very satisfactory hydraulic agitation. The bypass line should always come close to the bottom of the tank to reduce foaming.

A jet agitator is easy to install. A pipe is attached to the output side of the pump and extended into the tank and along the bottom. Jet agitator nozzles are spaced along the pipe to maintain turbulent agitation. Even a small pipe with holes drilled in it can be used to create a constant turbulence. To maintain adequate agitation, the spray mixture should be recirculated through the pipe at about 10% of the total tank capacity per minute.

If a knapsack sprayer or sprinkling can is used, the mixture should be shaken or stirred at frequent intervals to maintain the chemical suspension.

Applicators using wettable powder herbicides for the first time



Hyvar weed killer was applied to this spur track, foreground, in the high rainfall area of Florida, using 18 pounds per acre. The photograph, taken 5 months after application, shows the effectiveness of Hyvar on the undesirable growth.

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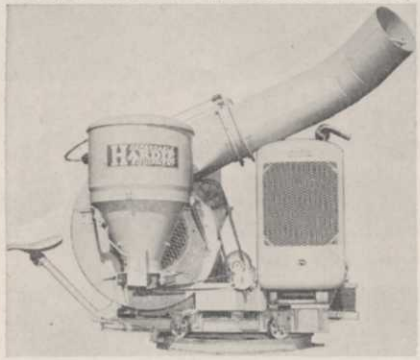

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should use a water volume of 200 to 300 gallons per acre to carry the recommended amount of chemical, especially where hand-operated weed spray guns on hose lines are used. With experience, it will be found that certain jobs require less spray per acre, often as little as 100 gallons per acre and sometimes even less. Smaller volume means smaller nozzles, lower pressures, but of course more accurate calibration and greater care in spraying.

When the equipment is adequate, the proper rate per acre should be determined, and the sprayer should be calibrated to deliver this rate in the spray-

On this track in the state of Washington, Hyvar weed killer was applied at 15 pounds per acre. The photograph was taken 4 months later.

water ratio which is being used. Hyvar weed killer is applied at rates of 4 to 25 pounds per acre, and at least 2 gallons of water are required for each pound of Hyvar. The proper amount of Hyvar for each tank filling should be weighed out carefully.

Apply Early in Growth Season

Field trials indicate that Hyvar can be applied effectively at any time during the period of active growth for the weeds to be eliminated, but kill will be most prompt if application is made during the early part of the growing season. Late season applications are not recommended, when plant growth has hardened off or is dormant.

Tall and dense vegetation should be removed before spraying in order to obtain uniform ground coverage.

Before using Hyvar weed killer, or any other herbicidal chemical, the area and type of vegetation should be examined to determine whether one chemical should be used alone, or whether conditions indicate a combination of chemicals.

For example, where hard-to-kill grasses grow in combination with woody vines and brambles, other herbicides of known effectiveness for control of woody plants will need to be included in the spray. With many commonly found mixtures of grasses and broadleaved weeds, 50-50 combinations of Hyvar and Karmex diuron weed killer have proved effective.

Furthermore, topography, soil texture, and rainfall enter into the weed control picture. If water moves laterally in the treated area, plants immediately outside the treated area may be affected. Also, trees with only a small part of their root system in soil containing a soil sterilant may be injured or killed.

None of these soil sterilant materials should be used on lawns, walks, driveways, tennis courts, or similar areas. Equipment used for them should not be used for applying any chemicals to desirable vegetation; and care should be used in draining or flushing equipment, to be sure that no tank residues reach the roots of desirable plants, and that no chemicals get into any water supplies.

The areas where Hyvar weed killer and other soil sterilants are suitable include:

Oil industry — refineries, pipelines, tank farms, producing wells. *Railroads* — track, yards, sidings, crossings, bridges, switches, towers. *Industrial plant sites* — parking areas, storage areas, fence lines, sidings. *Roadways* — shoulders, guard rails, bridge abutments, curbs, signposts. *Drainage ditches* — dry ditch bottoms.

Custom applicators have long served some of these markets with pest control programs, disinfectants, or equipment cleaning and maintenance. Vegetation control is a growing segment of the business. Each new chemical herbicide development, such as Hyvar, adds to the specialized service which the custom applicator can provide.

Next month:

How Chlorea Herbicides Work

Get dependable

insect control on lawns with

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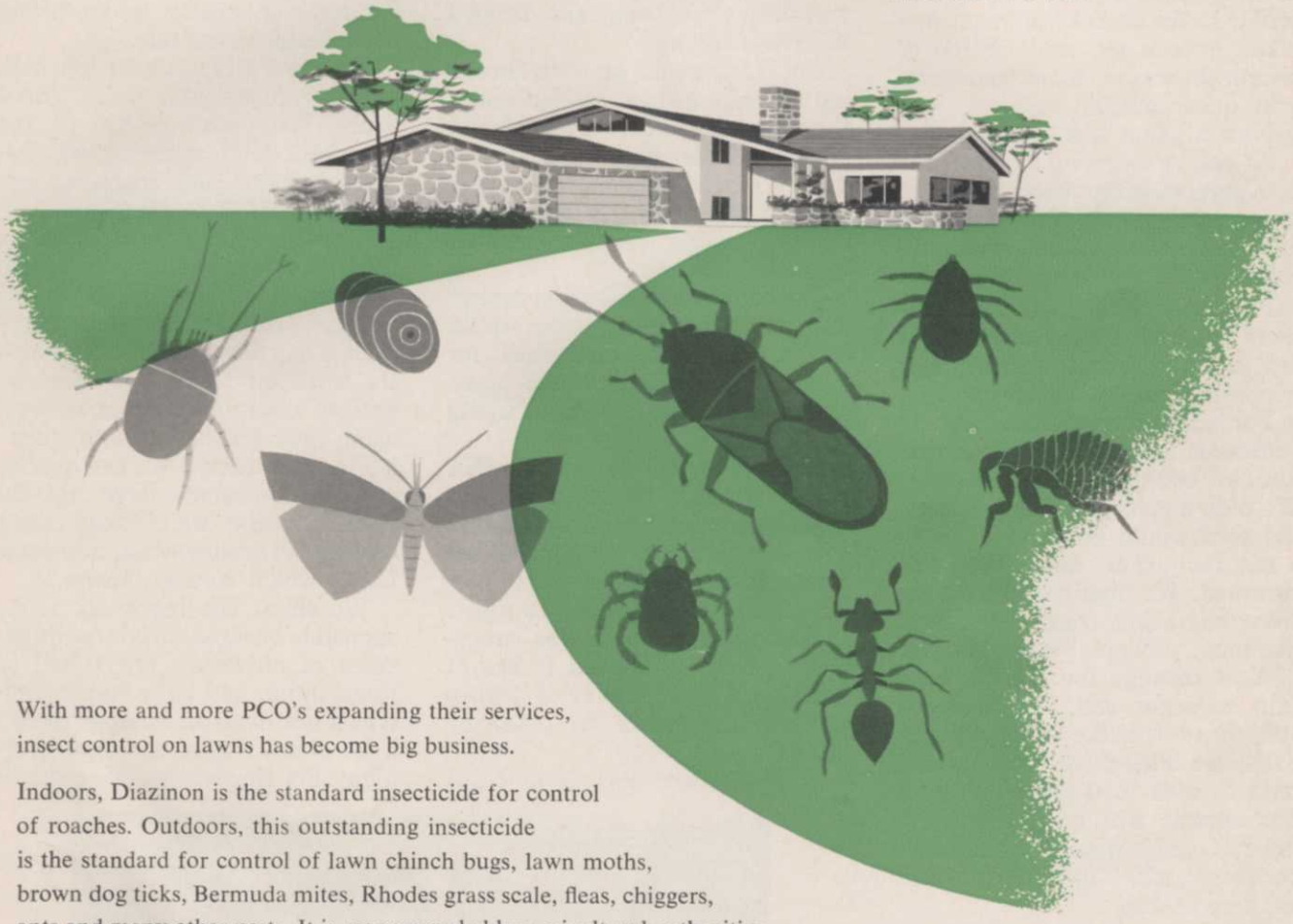

With more and more PCO's expanding their services, insect control on lawns has become big business.

Indoors, Diazinon is the standard insecticide for control of roaches. Outdoors, this outstanding insecticide is the standard for control of lawn chinch bugs, lawn moths, brown dog ticks, Bermuda mites, Rhodes grass scale, fleas, chiggers, ants and many other pests. It is recommended by agricultural authorities and lawn and turf experts everywhere.

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New England CA Finds Hidden Bonus in His Jeep

Self-Designed Power Spray Rig Was Shortcut to Home Lawn Market

By ROBERT H. J. PELLETIER

Ideal Spray Company, Lynnfield, Massachusetts

WHY DID we consider going into lawn spraying? When our company was a fledgling years ago, we knew lawn service had offered little opportunity for substantial profits in the past. Equipment was often expensive, and choice of chemicals was as scant as results were questionable.

Now all that has changed.

As the years rolled by, and our firm grew with the times, we began to come across certain perplexing customer complaints which recurred with increasing frequency.

Primarily these unhappy customers were concerned about their lawns, and the insects and weeds which had all but taken over.

For example, residential ant infestations seemed to grow worse, and we couldn't figure out why. We'd do a good job inside, and all the ants would be gone. Then in a relatively short while, the pests returned. We finally decided they were migrating from the lawns, attracted perhaps by the transfer of heat through foundation walls into adjacent soil. We believed this heat transfer kept nearby colonies sufficiently active to force ants to seek food inside. Part of our answer was to put down a layer of dust around the building's perimeter, which did help prevent ant migrations.

Right after the war we got a call to control an earwig infestation in Nahant, Mass. It was 1946, and we hadn't any idea how to control earwigs other than to spray with available chemicals. Back then we were already using a lot of chlordane for roaches and ants so we tried it on the earwigs and got 100% control. It seemed easy.

Next year, the same calls came again. By this time the chlordane flyers were beginning to talk about servicing estates and lawns for ants, earwigs, chiggers, webworms, lawn moths, chinch bugs, grubs, etc. We had 2 or 3 calls on earwigs that year, so we consulted with some authorities to see what the story was.

We learned lawn pest control was the coming thing, and decided to give it a try.

For a few years we tried throwing chlordane dust out by hand; then we tried spraying with hand sprayers. Later on, we decided to build a pump for spraying because there weren't enough calls back then to merit the purchase of special equipment.

We bought a well-known motor, and put a pump together. After half a season, it broke down for good. We didn't know too much about the mechanics of pumping systems then.

Next year, we bought another pump (different brand) and spent two seasons hauling it on and off a trailer from job to job. If the pump broke down, it took from 30 minutes to half a day to repair it. But the experience was educational, and we decided it wasn't worthwhile to carry a pump around from place to place by hand.

So we retired the rig and put together our first practical unit. For power, we used a Briggs and Stratton motor. We got a diaphragm pump (the Ace type) with what is called a top hat or an air chamber to prevent pulsing. We added bypass and selector valves, strainers, pipes, etc., and 200 ft. of special insecticide hose and were ready to go.

This unit was permanently attached to our trailer and connected with pipes to two 55-gallon drums with bypass returns. These returns fed into the drum in use, and thus acted as an agitator. This agitating system has worked well for us, especially when using emulsifiable chemicals.

We went from job to job with our Ace pump and trailer for 4 years. We didn't realize at the time that lawn spraying was becoming more and more an important part of our business.

We often thought we'd buy a used oil truck, but we were afraid the amount of lawn spraying and termite work wouldn't support such a big investment. We ruled the truck out altogether when we noticed many oil companies were using their trucks for lawn spraying in the summer. We feel quality suffers when these large rigs are used, because we noticed some damage to ornamentals, and some lawns which turned brown.

We think the big truck is responsible because such large quantities of chemicals are mixed in these units, and agitation is difficult if not impossible. Also, there's a lot of settling of chemical overnight. For this reason, one custom-

Cost of the war surplus fuel selector valve PCO Bon Pelletier is pointing at was only $3.95. Pressure valve and hose connections are easily accessible.

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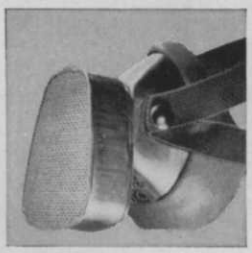

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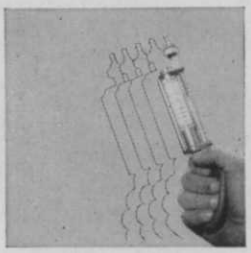

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er is apt to get a high percentage of chemical, while another down the street gets mostly water.

Perhaps some of the new, specially designed outfits have overcome this problem.

Our own answer, when we needed more equipment, was a 1960 pickup Jeep with 4-wheel drive. To add a power take-off, we hooked up the transmission so it runs a Hypro 6-neoprene-roller pump. This is located underneath the Jeep, completely out of the way. This pump is again connected to two 55-gallon drums carried in the box of the Jeep. As can be seen in the pictures, we have bypasses, relief valves, selector valves, and hose connections all conveniently attached to the outside right hand side of our pickup.

We put away our 200 ft. of ⅜" insecticide hose and bought 300 ft. of ¾" garden hose which is easy to handle and does not kink. It is rubber with neoprene housing and is guaranteed by the manufacturer "to withstand 15 times house pressure." We use this type of hose because it delivers a good quantity of chemical, saves time, and is light and easy to maneuver. We've now used this hose for 3 years without any unusual breaks or harmful effects from the chemicals we spray. These chemicals are the emulsifiable type, such as chlordane and dieldrin, used primarily for lawn treating and termite work.

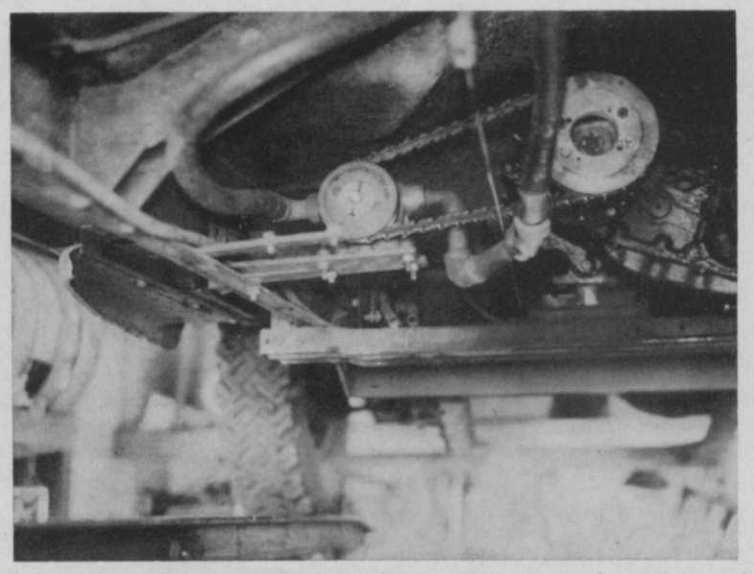
The pump itself is almost foolproof. We can completely overhaul it, replace the rollers with a whole new set, and be back in business in a half hour at the most.

Extra Benefits

There are also "secondary values." For example, our power take-off system is safe. Children are always around looking at our equipment, but now there's no chance they'll get their fingers caught in the mechanism. The whole unit runs directly off the Jeep and we find it 100% efficient.

For our belt drive we use link belts which are easy to adjust on the job without having to move pumps, etc., on slotted bases. There are belts on the market today which can save precious time and expense with the elimination of one link, or cutting off 1" and reconnecting the belt with special connectors. These pulley belts cost about the same as the old continuous type which have no connections, and which have a bad habit of wearing out or expanding at the wrong time. This required using all kinds of tools to move motors and get everything going again.

We are amazed that so many contract applicators have trucks which could be converted like ours, and so few have used this device. Right at their fingertips, they have the means to add a power take-off directly to their vehicles. With the proper arrangement of pipes, hoses, adapters, etc., operators can have one of the sweetest spray rigs available.



Author Pelletier says his Jeep power take-off (upper right-hand corner) is efficient and a real timesaver. The Hypro pump is driven by a link belt. Note ¾" feed lines on both sides of the pump.

Insects Promising for Control of Alligatorweed, USDA Says

Several South American insects may be useful for alligatorweed control, according to a report from the U. S. Department of Agriculture. Alligatorweed is a costly aquatic pest in the South.

Research has shown insects can be pitted against weeds with effective results, USDA scientists say. In the western U.S., for example, a beetle imported from France successfully controls the noxious Klamath weed, which once infested millions of acres of rangeland.

Especially promising for alligatorweed control is a flea beetle that apparently was successful in Argentina. This beetle is not known to feed on any plant other than alligatorweed and its one close relative, a plant not found in the U. S.

Two other insects: a stem borer, and a species of thrips, are the chief suppressors of alligatorweed in the extreme South, where temperatures may be too high for the flea beetle.

At least two years of work will be needed in South America, scientists from USDA's Agricultural Research Service admit, before any native weed-destroying insects can be brought into the U.S.

This additional research will include: (1) further screening to make sure flea beetles don't hurt beneficial plants or attack stored foodstuffs; (2) isolation of the beetle from two natural parasite enemies — a fungus and a small fly — so it can be sent here free of parasites; and (3) adjustment of the beetle to U.S. seasons, which are of course the opposite of those in South America.

Alligatorweed, a native plant of South America, is potentially one of the most troublesome aquatic weeds of the southern states. Resistance to certain herbicides has complicated control measures.

Roberts Bulletins Available

Several brochures on Herbisan 5, Thiram, and other weed and turf chemicals manufactured by Roberts Chemicals, Inc., are now available to weed and turfmen. For copies of them, write Roberts at Nitro, W. Va.

KEEP THE GRASS **GREENER** on your customers' side of the fence!

Use TRITHION® insecticide for lawn chinch bug control. Chinch bugs are small sucking insects that feed on the juice in leaves and stems of grass, causing brown patches and eventual death of infested lawns. Chinch bug destruction is a growing problem around the country . . . but a problem you can solve for your customers with TRITHION.

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TRITHION *gives quick, positive control.* It's a fast-acting compound that controls *all* chinch bugs, including those strains that have become resistant to other materials. ®Stauffer's Reg. T.M. for an insecticide-acaricide

TRITHION *is easy to handle safely.* It is less hazardous to handle than many other organic phosphorus pesticides. TRITHION is an easy-to-apply emulsifiable liquid . . . and also is available in granular form.

TRITHION *offers one-shot control . . . that lasts.* Repeat sprays are rarely needed with TRITHION—"one-shot control" *stops* chinch bugs. Its long residual action means long-term protection . . . with resulting reduced costs.

Use TRITHION on your customers' lawns. Remember—TRITHION keeps the grass greener on their side of the fence . . . and on yours, too! For details, write Stauffer Chemical Company, Agricultural Division, 380 Madison Avenue, New York 17, N.Y.

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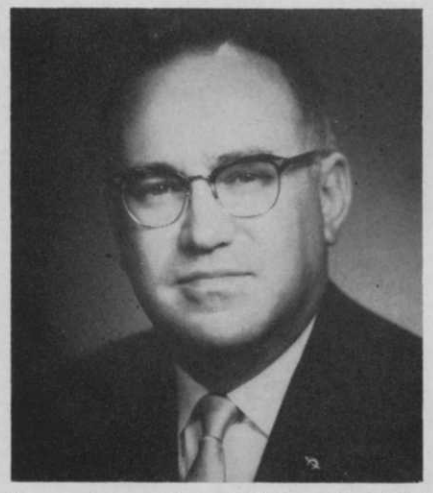

Two water weed specialists are Hyacinth Control Society president T. W. Miller, Jr. (right), and secretary-treasurer Herbert J. Friedman (left). Both officials have predicted a highly successful inaugural meeting this month in Ft. Lauderdale, Fla.

Hyacinth Control Society's First Annual Meeting Expected to Draw 150

Over 150 persons are expected to gather for the Hyacinth Control Society's inaugural annual convention in Fort Lauderdale, Fla., July 8-11.

Meeting at the Governor's Club Hotel, delegates to this initial seminar plan to outline basic aims of the newly established group, and roll up their sleeves for a hard working series of conferences.

Program for the kickoff conclave sets a keynote of variety and thoroughness which will be carried on each year, T. W. Miller, Jr., HCS president, told a *Weeds and Turf* reporter. Miller is director of Florida's Lee County Hyacinth Control District, and has been active in the society since its inception in July 1961.

Government research agencies, both state and federal, are joining with suppliers' technical representatives and university leaders in a program which should lay low some of the old phantoms of water weed control.

Delegates are apt to be particularly interested in the Tuesday afternoon excursion to the USDA's Aquatic Weed Research Laboratory in Ft. Lauderdale, Herbert J. Friedman, HCS secretary-treasurer, predicts. Friedman is president of Southern Mill Creek Products Co. in Tampa.

President Miller will preside over Monday's opening session which will highlight both general and specific issues.

Included in the first morning's lectures is a discussion on control of Southern Naiad and other submerged weeds found in irrigation and drainage canals throughout South Florida. This talk is being presented jointly by Drs. R. D. Blackburn and L. W. Weldon of the Crops Research Division, Agricultural Research Service, U. S. Department of Agriculture, Ft. Lauderdale.

Then John B. Hussey of Southern Mill Creek Products Co. will discuss control of submerged weeds with Aqualin.

Another chemical for aquatic weed control, Diquat, will be examined by A. C. White, Field Technical Specialist, Ortho Division, California Chemical Co , Orlando. He follows Drs. Samuel D. Faust and Osman M. Aly of Rutgers University who'll cover some effects of 2,4-D on drinking water quality.

On Tuesday, with HCS vice president A. S. Chipley presiding, speakers continue the analysis of specific chemicals being manufactured to ease the woes of weed controllers. John E. Gallegher, Amchem Products, Inc., Ambler, Penna., brings the conventioneers latest information on Amitrol-T for controlling water hyacinths.

Dr. John A. Mulrennan, of the Florida State Board of Health, points up the relationship between mosquito breeding and aquatic plant production. Then Pennsalt's J. C. Frizzell, who's stationed in Montgomery, Ala., talks about use of his company's Herbicide 47 for submerged weeds in canals and ditches.

Other talks on at least a dozen more topics round out this first yearly meeting, during which time is set aside for business sessions and a social program that includes a festive banquet Tuesday evening.

Purpose of HCS

According to the articles of incorporation, the Hyacinth Control Society is devoted to improved techniques in control of water hyacinths and other noxious aquatic weeds. Achievement of these improved methods is expected to be reached through research projects encouraged by the society, through scholarships promoted by the group, and through better public understanding of the crucial dilemmas in aquatic weed control.

An office of editor has been created specifically to work up proceedings of each annual meeting, and to issue bulletins to the general and trade press, through which this better informed public may be created. William Dryden presently fills this important post.

President Miller said anyone with an interest in combatting noxious aquatic weeds is eligible to join the Society. Persons who want to join may write him at P.O. Box 1711, Fort Myers, Fla.

Board of Directors of the Society is made up of the 4 officers already mentioned, along with Directors Thomas O. Fultz of Bartow, Fla; Edwin L. Seabrook, West Palm Beach; and Donald E. Seaman, Ft. Lauderdale.

July 11, 12 USDA Weed Day

Field evaluation of new herbicides, turf weed research, and sessions on growth regulation and general weed control, will be featured at the U. S. Department of Agriculture's annual Field Day Review of Crops Protection Research, July 11-12.

Meeting at USDA's Beltsville, Md., research complex, weed controllers will spend 2 days in close scrutiny of latest developments in vegetation control, according to program chairman Dr. W. B. Ennis, Jr., administrator of weed investigations at Beltsville.

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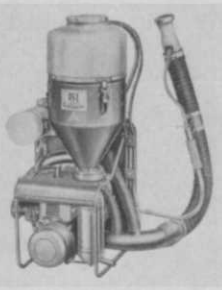

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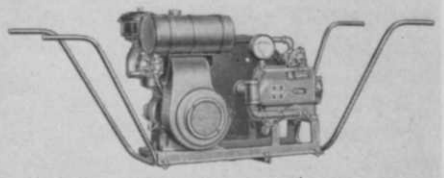

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Effects of Crabgrass Killers On Earthworms Studied

Chemicals are available to control crabgrass in lawns without affecting the earthworm population in treated areas, according to Dr. John F. Ahrens of the Connecticut Agricultural Experiment Station in New Haven.

Depending on uses of lawns, and on preference of the users, reduction of the number of earthworms may or may not be considered desirable, Dr. Ahrens says. Applicators may have to vary their treatments to conform to their customers' desires.

Dr. Ahrens' experiments at the Connecticut station showed Dacthal, a commonly used crabgrass killer, had no apparent effect on earthworms. Zytron, another effective herbicide in crabgrass control, had no appreciable effect on the earthworm population when applied at the rate recommended on the label. When this rate was doubled, earthworms were reduced 52%.

Pax, an arsenical complex, is known to be effective against certain soil insects, including beetle grubs. This compound caused an 89% decrease in earthworms.

Tricalcium arsenate, used for pre-emergence control of crabgrass, also controls beetle grubs, and was responsible for 82% fewer earthworms.

Chlordane, when applied at rates recommended for crabgrass control, reduced earthworm populations by 89%.

Diphenatrile, tested in Connecticut for the first time in 1961, had no apparent effect on beetle grubs or earthworms, the scientist reported.

Panogen Fungicide Detailed

Instructions on the use of Panogen turf fungicide, Morton Chemical's new product to fight turf diseases, are now available.

Included on the sheet are dosage recommendations for various turf ailments, antidotes, use precautions, and application methods. For a copy, CAs should write Morton Chemical Co., Soil Pesticides Department, Specialty Products, 110 North Wacker Drive, Chicago 6, Ill. Ask for Bulletin DMI-12.

Sheen X500 flame gun, described by the distributor as a versatile machine which offers new and positive weed control and soil surface sterilization, is now being marketed by the Smrt Import Co., 1105 West Plainfield Rd., LaGrange, Ill. The English-made device features a heavy-duty pump, pressure gauge, and control valve, and can be hand held or operated on a wheeled chassis with a hinged hood. According to Smrt, the Sheen X500 permits continuous use over a large area and provides a steady, completely controllable flame. Applicators may write the company to obtain descriptive literature, prices, and a free booklet on flame gun usage.

New Nomenclature

New common names for several herbicides have been accepted as standard nomenclature by the American Standards Assn. Here are the new substitutes for technical chemical names:

Amitrole is the common name for 3-amino-s-triazole (or 3-amino-1,2,4-triazole).

Atrazine is new generic term for 2-chloro-4-ethylamino-6-isopropylamino-s-triazine.

Chlorazine is simpler than 2-chloro-4,6-bis(diethylamino)-s-triazine.

Simazine is label for 2-chloro-4,6,-bis(ethylamino)-s-triazine.

Trietazine stands for 2-chloro-4-diethylamino-6-ethylamino-s-triazine.

Folder Lists Cleary Products

Several Chemicals for control of turf weeds and diseases, especially in golf greens and athletic fields, are described in a new W. A. Cleary Corp. bulletin.

Outlined in the illustrated booklet are Cleary's crabgrass killers, fungicides, and other turf chemicals. For copies, write the firm at New Brunswick, N. J.

More Support for Higher Turf in Control of Lawn Crabgrass

Scientists at the Connecticut Agricultural Experiment Station have more evidence that chemicals alone are not always enough to control crabgrass.

Tests at the station farm in Mt. Carmel, with 11 different turf grasses, showed that raising mowing height from 1″ to 2″ reduced stands of crabgrass from 33 to 12 plants per square foot.

Twelve crabgrass plants to the square foot is still too many to please most homeowners, so chemical control is necessary.

Of the pre-emergence herbicides tested at the station by Dr. John Ahrens, none gave complete control of crabgrass in all situations with no injury to turf grasses. While several were generally satisfactory, and Zytron and Dacthal continue to be the most promising, Dr. Ahrens says.

Good results were also obtained with calcium arsenate, diphenatrile, Bandane, and dipropalin. The latter two were used in limited trials.

Some pre-emergence crabgrass killers, particularly Zytron and calcium propyl arsonate, are also effective against crabgrass in its early seedling stages, the experimenters maintain.

A complete report on the Connecticut series of tests is available to contract applicators on request. Write Publications, Box 1106, New Haven 4, Conn., and ask for Bulletin 649.

Chapman Has Herbicide Samples

Two new folders on No-Vine and Weed-Free herbicides, with actual samples of the chemicals attached, are available to CAs from the Chapman Chemical Company.

Both booklets are illustrated and contain condensed use-information. The Weed-Free brochure comes with small samples of both granular and wettable powder formulations. No-Vine is a granular form, and a sample of this chemical is included with the descriptive literature.

For copies, CAs should write Chapman at P.O. Box 3158, Mallory Station, Memphis 9, Tenn.

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Economy plus all-around versatility and complete dependability. Capacities of 5 and 10 g.p.m. at up to 400 lbs. pressure. Tank sizes: 50, 100, 150, 200 and 300 gal. Complete line of 3 g.p.m. sprayers also available.

choose the exact model you need from

3 John BEAN SPRAYER SERIES

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PROFITABLE PERFORMANCE FOR EVERY JOB:

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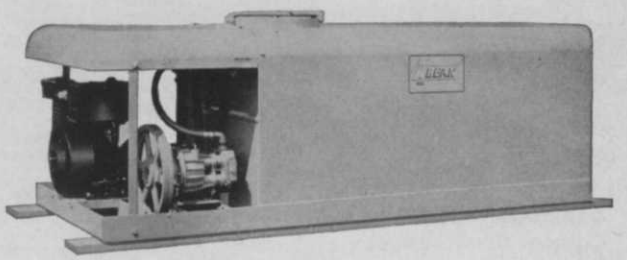
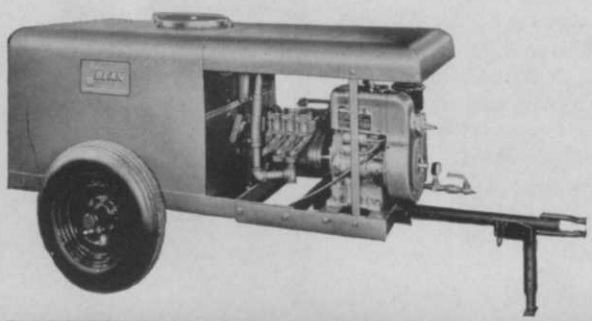
NEW ROYALIER SERIES

Featuring the new 4-piston Royalier pump that combines compactness plus performance that's practically pulsation-free. Capacities: 15 g.p.m. at pressures up to 400 lbs. and 20 g.p.m. up to 300 lbs. pressure. Tanks available in 200, 300, 400 and 500 gal. sizes.





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Chemical Use in Calif. Up

An increase in use of chemicals for weeds in city lots, and added emphasis on roadside weed control, are two salient developments in the weed control industry in California, William Harvey, business manager of the California Weed Control Conference, told a *Weeds and Turf* reporter recently.

Harvey said because burning weeds contributes to air pollution, and because discing stirs up dust clouds, more and more West Coast cities are turning to chemistry for answers to weed control problems.

The California official also said the danger of fire caused by rampant weeds along roadways and other range areas is causing many communities to investigate chemical weed control. This is particularly true in the southern part of the state, where some spectacular fires have focused attention on the danger.

Harvey's organization now has available proceedings of the 14th Annual Meeting, which was held in January Copies of the 114 page book are available at $2 each. Interested CAs may write the association manager at the Department of Botany, University of California, Davis.

Next meeting of the California Weed Control Conference is scheduled for Jan. 22-24 in Santa Barbara.

Herbicide Guide from Stauffer

Instructions for use of Eptam and Tillam, two selective herbicides from the Stauffer Chemical Company, are contained in a 12-page booklet the company has just published.

Included in the illustrated brochure is an outline of weeds controlled by the two weed killers, along with directions for optimum use. Broadcast, band, and lay-by applications are discussed, as well as incorporation equipment and liquid band application.

For copies, write the firm at 380 Madison Ave., New York 17, N.Y.

What Vineland Has

Specification sheets covering all the herbicides and fungicides manufactured for Vineland Chemical Company's line of turf products are available to interested applicators.

Vineland's Gustave Hulkower said information sheets on Crab-E-Rad, Super Crab-E-Rad, Pre Emergent Crab-E-Rad, Liquiphene, and Super Crab-E-Rad with Calar are in stock and will be mailed readers who write him at West Wheat Rd., Vineland, N. J.

1962 NEWCC Proceedings Still Available at $4.50

Copies of Proceedings from the 1962 Northeastern Weed Control Conference are still available at $4.50 a copy, according to Dr. John Meade, secretary-treasurer of the group.

Dr. Meade also said the Conference is anxious to fill out its library with sets of Proceedings for 1951 through 54, and 1959-60. Anyone with surplus copies, or anyone who wants to buy the 1962 publication, is asked to communicate with Dr. Meade at the Department of Agronomy, University of Maryland, College Park.

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"For Over Than 70 Years Choice For Quality"

Complete line of hand, continuous, compressed air, knapsack, bucket, wheelbarrow and barrel sprayers and insecticide dusters. Many styles of spray nozzles. Quality design and performance.

Streamlined BLIZZARD Copper Continuous Sprayer

World's Finest
Two Sizes: Pint, Quart (39 ounces)
Solid copper tank. Seamless, highly polished brass pump barrel. Beautiful design. Sturdy construction. Lasts for years. Double nozzle sprays fine, powerful mist straight ahead or at any angle.

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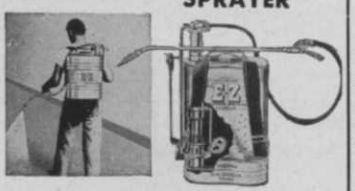

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Packaged in a handy 1 pt. plastic container for the home owner and up to 5 gal. for larger lawn maintenance problems.
Can be combined with 2,4-D. Easy to apply and proved effective.

successfully controls

veronica (speed-well)	chickweed (in the South)	goathead
knotweed	little barley	henbit
bur clover	cranesbill	lespedeza
white clover	filanee	oxalis
sweet clover	dichondra (pony foot)	vetch
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Book Review

Weed Identification and Control

by Duane Isely, Iowa State University Press, Ames, Iowa. 1960. 400 pp. $4.95.

Liberally illustrated and efficiently arranged, this textbook on weeds will be valuable to seasoned applicators and novices alike.

Author Duane Isely, professor of botany and plant pathology at Iowa State University, has included 160 full-page illustrations by artist Frances Fenske. These drawings are sure to help the applicator with species identification. Dr. Isely's book is one of the rare texts which combines weed identification and control in one volume.

Among major areas covered in the book are: importance, behavior, distribution, and identity of common weeds; methods for determining unknown weeds and similar plants; basic principles of weed control; and recent advances made in herbicidal weed control.

While *Weed Identification and Control* covers the subject from *Abutilon throphrasti* to Zygophyllaceae, and 2,4-D to Dalapon for the professional worker with experience, a special section for the neophyte and serviceman provides simple, nontechnical identification of several hundred common and important weeds. This gives the book value as either laboratory manual or field guide.

There may be some drawback for commercial applicators because the section on soil sterilization is not lenghty. This flaw is overcome, though, by the books's thoroughness in dealing with classification, and by the excellent identification keys. An extensive bibliography is also included.

CAs will find this handsomely bound, moderately priced text a welcome addition to their office library.

Literature you'll want . . .

Here are the latest government, university and industrial publications of interest to contract applicators. Some can be obtained free of charge, while others are nominally priced. When ordering, include title and catalog number, if any. Sources follow booklet titles.

Suggested Guide for Chemical Control of Weeds. Agricultural Research Service Report No. 22-67. 60 p. 1961. U. S. Department of Agriculture, Beltsville, Md.

A Survey of Extent and Cost of Weed Control and Specific Weed Problems. 68 p. 1962. Agricultural Research Service and Federal Extension Service Joint Report No. ARS 34-23. U. S. Department of Agriculture, Beltsville, Md.

Preventive Weed Control for Industry. Geigy Agricultural Chemicals Bulletin GAC 630. 12 p. il. Geigy Agricultural Chemicals, P.O. Box 430, Yonkers, N.Y.

Controlling Lawn Weeds with Herbicides. Home and Garden Bulletin No. 79. 16 p. il. U. S. Department of Agriculture, Washington 25, D. C.

The Biology and Control of Turf Grubs. Research Bulletin No. 829. 32 p. il. 1959. Ohio Agricultural Experiment Station, Wooster.

Lawn Insects: How to Control Them. Home and Garden Bulletin No. 53. 24 p. il. Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. 15¢.

Recommended Uses for Sevin Insecticide. Bulletin F-40851. 4 p. 1962. Union Carbide Chemicals Co., 270 Park Ave., New York 17, N. Y.

Establishing and Maintaining Utility and Pipe Line Rights-of-ways. Technical Bulletin TC-19. 4 p. Agricultural Chemicals Div., Diamond Alkali Co., 400 Union Commerce Bldg., Cleveland 14, Ohio.

Keep the Way Clear with a Planned Vegetation Control Program. Bulletin 137-145-57. 12 p. plus charts. Agricultural Chemicals Dept., Dow Chemical Co., Abbott Rd. Bldg., Midland, Mich.

Economical and Efficient Industrial Weed and Brush Control. Bulletin A-22937. 16 p. il. E. I. duPont de Nemours & Co., Inc., Agricultural Chemicals Div., Wilmington, Del.

Economical, Long-term Brush Control for Rights-of-Way. Bulletin A-23320. 16 p. il. E. I. duPont de Nemours & Co., Inc., Agricultural Chemicals Div., Wilmington, Del.

Chemical Mowing with MH-30. Booklet No. 11. 28 p. il. Naugatuck Chemical Div., U. S. Rubber Co., Naugatuck, Conn.

Chemical Control of Weeds and Brush Along Roadsides. Bulletin 624. 32 p. il. 1959. Connecticut Agricultural Experiment Station, New Haven.

Urox Weed Killer. Bulletin F-UX Cl-261. 12 p. il. Allied Chemical Corp., General Chemical Div., 40 Rector St., New York 6, N. Y.

Complete
One-Source Coverage

DISEASES OF TURFGRASSES

By HOUSTON B. COUCH,
Assoc. Prof. of Plant Pathology
The Pennsylvania State University.

How to Identify
How to Control

Thoroughly illustrated with line drawings, photographs, and full-color plates.
May 1962. 6 x 9. 304 pages. $10.00

HERE is a detailed, comprehensive treatment of the diseases of turfgrasses, including illustrated information essential for the identification and control of both fungus and nematode-incited diseases. This is the most complete, up-to-date work available on the subject of controlling turfgrass disease.

Diseases of Turfgrasses is organized so that you can conveniently find the answers to your questions about the identification and control of the diseases that affect fine turf. The author has arranged the sections devoted to specific diseases in the following manner: (1) Symptoms, (2) Pathogen, (3) Hosts, (4) Disease Cycle, and (5) Control. The control sections for the disease groups are further divided into three parts: Cultural Practices — Resistant Varieties — Chemical Control.

This complete one-source reference book is specifically suited to the needs of pathologists, agronomists, turfgrass management specialists, golf course superintendents, park maintenance supervisors, and field representatives serving this rapidly expanding industry.

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(*from page W-3*)

of job should cost about $164, leaving a gross profit of $336. Not included of course are depreciation, administrative expenses, etc.

On the other hand, most termite operators normally expect to produce an average of $150 per day per 2-man crew, with material cost approximately 10% of the total job. Using the same 2-day basis, the termite crew would produce $300. With labor cost at $64 and materials at $30, gross profit is $206, compared with $336 for the weed job.

Termite control is much further advanced; there is presently more repeat work; control procedures have been more or less standardized, and results, in most cases, are fairly well predetermined. Conversly, weed control is in its infancy, and industrial plants, railways, and other prospects have not all been sold yet on the fact that they should pay a sustaining fee to get results which may be more difficult to come by.

It's apparent then that weed controllers should expect more money per unit of work-time, and more gross profit above materials and labor than is realized in structural pest control. It is especially important for an operator just beginning this service to record his material and labor costs accurately, and to compare these with his total volume to make sure labor and material expenses are running well under 40% of total volume.

Seasonal Variations

In some areas, addition of weed control and turf spraying helps level out seasonal fluctuations in business volume where a firm does both vegetation work and general pest control. Unfortunately, though, in the South, peaks of each activity coincide closely.

In Mississippi, for example, weed control begins in February and continues at peak through May. This is exactly the time when the heaviest concentration of termite activity is experienced.

Turf pest control, on the other hand, begins in late April and runs through September, reaching its peak in July and August. This also coincides very closely with the peaks of general pest control services.

With new developments in soil sterilization, pre-emergence sprayings, and year-round treatments becoming more and more common in industrial applications, it is hoped the changes in business cycles will be lessened.

Possibly the biggest potential, so far as size of individual accounts, is industrial weed control, although some turf work, such as contract golf course spraying, nets large amounts.

Redd's operations also include a complete lawn maintenance program. To supplement his contract spraying, the Mississippian offers lawn chemicals and tools for resale.

Potential Volume

A town of 2,000 should have at least 30 varying types of business establishments which could use some kind of weed control. Each account should be worth an average minimum of $50, or a total of $1500 for the town. On this basis, potential in weed control in an urban area should be 75¢ per capita yearly. In areas with more than 10,000 people, the potential is probably 50¢ per capita per year, because the number of business establishments per person generally goes down as population goes up.

Using this formula, a town of 10,000 should bring in $5,000 in weed control accounts yearly, and a city of 50,000 would bring in $25,000. This does not include parks, railways, or highways.

As population rises above 100,000, other elements prevent using this system of calculation.

Here are only a few immediate prospects for the PCO turned weed controller: parking lots, drive-ins, theatres, junk yards, fence rows, lumber yards, storage areas, perimeters of buildings, paper mills, shipyards, oil refineries, manufacturing plants, drainage ditches, oil tank farms, oil wells, walkways, railway yards, sidings, airports, turnpikes, race tracks; any place where vegetation is undesirable.

Another branch of service becoming increasingly popular, especially in the South, is aquatic weed control in lakes, ponds, rivers, etc. Operators in this field will invariably be forced into a lake management program.

Before any operator begins to diversify, he should:

(1) have confidence in what he is doing;

(2) be willing to take some chances;

(3) immediately begin to learn more about the new service; this knowledge comes from consulting experiment stations, watching others in the field, and reading the periodicals;

(4) give his customers good service; and

(5) have his other business well under control so diversification doesn't hurt his bread and butter,

Meeting Dates

Hyacinth Control Society First Annual Meeting, Governor's Club Hotel, Ft. Lauderdale, Fla., July 8-11.

U. S. Department of Agriculture Field Day Review of Weed Control, Plant Industry Station, Beltsville, Md., July 11-12.

Cornell Weed Day, New York State College of Agriculture, Cornell University, Ithaca, N. Y., July 17-18.

International Shade Tree Conference 38th Annual Convention, Jack Tar Hotel, San Francisco, Calif., August 5-10.

National Arborists Association Meeting, in conjunction with International Shade Tree Conference above.

American Society of Plant Physiologists, Department of Botany and Plant Pathology, Oregon State University, Corvallis, Aug. 27-31.

North Central Weed Control Conference, Hotel Lowry, St. Paul, Minn., Dec. 3-5.

Northeastern Weed Control Conference, Hotel New Yorker, New York, N.Y., Jan. 9-11, 1963.

Southern Weed Control Conference, Admiral Semmes Hotel, Mobile, Ala., Jan. 16-18, 1963.

Weed Society of America Meeting, Pick-Congress Hotel, Chicago, Ill., Feb. 10-13, 1963.

until he is thoroughly established in the new field.

Whereas weed control may fit into the pattern of service for one PCO, turf and ornamental pest control may fit into the pattern of another. Because a PCO has been successful in integrating any of these services with his structural pest control is no reason why these should be compatible in all cases.

If the initial experience is gained by performing small jobs with equipment and labor that is already available, then the PCO will be in a position to withdraw if he encounters difficulties, or go forward to even greater things.

Penco Brochure Offered

A brochure covering uses of its Penco Endothal turf herbicide in southern states has been prepared by Pennsalt Chemicals Corp.

Condensed instructions on application and precautionary measures are included in the illustrated bulletin, available to contract applicators. For a copy, write the company at P. O. Box 1297, Tacoma 1, Wash., and ask for Bulletin S12.

Shoulder-mounted Mist Blowers Good for Weeds, Forester Says

Shoulder-mounted insecticide mist blowers can be used to control "forest weeds" in stands of conifers, according to recent research by a University of Massachusetts scientist.

Trials run in Massachusetts and New Hampshire by Dr. William P. MacConnell, associate professor of forestry at the Amherst school, show these machines are just the thing for applying herbicides in many mixed stands of timber.

Undesirable trees and brush found in forests are controlled by a spray of 2,4,5-T which enters through leaves and flows through the plant's vascular system. Conifers, which have already "hardened off" in August when the mist is applied, are no longer absorbing material through their needles, and are not affected.

This method costs about the same as doing the job from the air, researchers admit, but has other advantages. Ground-applied spray, for example, doesn't drift as far.

This mist blower technique can be used to clear roadsides of weeds, as well as to control mosquitoes and other insects in public parks and picnic grounds.

Another advantage in the shoulder-mounted apparatus, according to Dr. MacConnell, is that while it has an effective range of only about 30 feet straight up, small mist blowers can be carried into areas inaccessible by truck or jeep. And since these shoulder machines spray a low volume of highly concentrated material, only 2½ gallons of solvent per acre are required, an amount easily carried by one man.

Geigy Debuts Metal Chelate

Sequestrene Fe, a new metal chelate said to be highly effective on ornamentals in addition to the customary agricultural applications, has been announced by the Geigy Agricultural Chemicals Company.

An informative sheet on Sequestrene Fe is available to custom applicators who write Geigy at P.O. Box 430, Yonkers, N. Y. Ask for Information Sheet GAC 388.

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MIST SPRAYER and DUSTER

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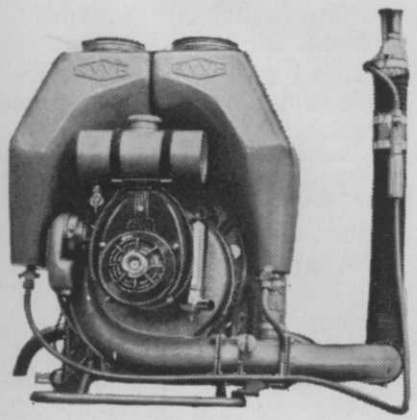

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The ROLLER SPRAYER combined with specified chemicals, proven by actual field use, provides an economical method for attaining a weed free lawn.

COST EXAMPLE:

Labor (at $1.75 per hr.)	$ .88
2-4-D Herbicide	1.63
Total cost for one acre	$2.51

✔ Weeds up to 3 acres per hr.

WRITE NOW for complete information

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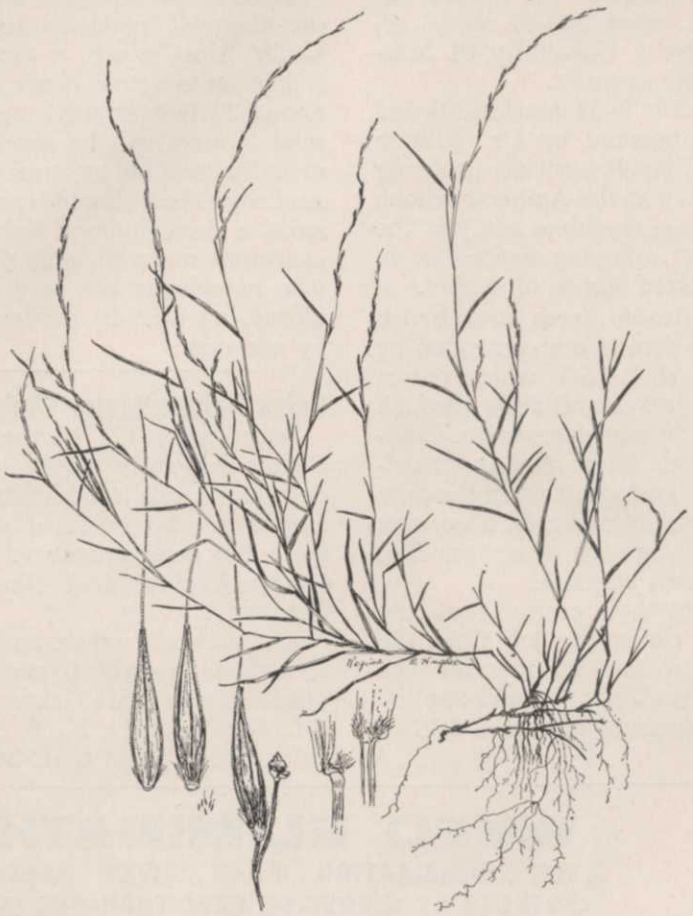
Know Your Species

NIMBLEWILL

(Muhlenbergia schreberi)



Nimblewill, a perennial grass that reproduces both by seeds and underground stems, is generally found in lawns, fence rows, and non-cultivated areas. It is often confused with crabgrass and Bermuda grass in lawns. However, both crabgrass and Bermuda grass are prostrate in habit of growth and crabgrass is only an annual. Growth of nimblewill that develops from rooting stems forms dense patches 10 inches or more in diameter.

Stems are slender, branched, and spread along or near the ground's surface. Lower part of these stems is prostrate; upper parts curve upward.

Tiny, inconspicuous flowers and seeds are arranged loosely on nodding or ascending branches along the upper part of the stem. Leaf blades are usually about ⅛ inch wide and not more than 2 inches long. Stems that bear seeds are from 2 to 6 inches long. These seeds are very fine and are borne singly. Nimblewill leaves are not hairy, except for occasional marginal hairs at the base.

New growth of nimblewill starts from the underground stems in early spring and continues to grow throughout the summer and early autumn. Roots remain alive all year, but the tops die in autumn, leaving dense brown, stubbled mats in lawns during winter.

Nimblewill is grayish-green and contrasts with the darker green of such turf plantings as bluegrass.

Research in Indiana and Kentucky indicates that nimblewill is controlled with repeated treatments of Zytron. Applications of 30 lbs./acre were made in early June and repeated about a month later.

Prepared in cooperation with Crops Research Division, Agricultural Research Service, United States Department of Agriculture, Beltsville, Maryland.

DRAWING BY REGINA HUGHES, USDA, BELTSVILLE

New Section Needed

(from page W-1)

provide a continuing source of practical information on how, where and when to apply herbicides and turf pesticides. It can aid in the interpretation and dissemination of the excellent research findings of both public and private agencies. It will be an important news source for new products and uses and for news of industry activities in general.

It is estimated that some $90,000,000 was spent on herbicides in 1961. Use in agriculture is extensive and there are increasing needs for herbicides along highways, railroads, and other service rights-of-way as well as in multitudinous other industrial type areas. The list of potential markets for herbicides and for custom applicator services continues to grow. Also, it is said that there are some 33 million single family homes in this country of which a majority probably can utilize some form of turf pest control or chemical weed-grass control around the premises.

Truly here is a burgeoning market for qualified energetic, informed operators and this new section of *Pest Control* magazine should provide a valuable assist.

Bartlett Appoints E. J. Duda

Dr. Edward J. Duda has been named Director of the Bartlett Tree Research Laboratories. He has been acting director since 1960, and joined the organization in 1951.

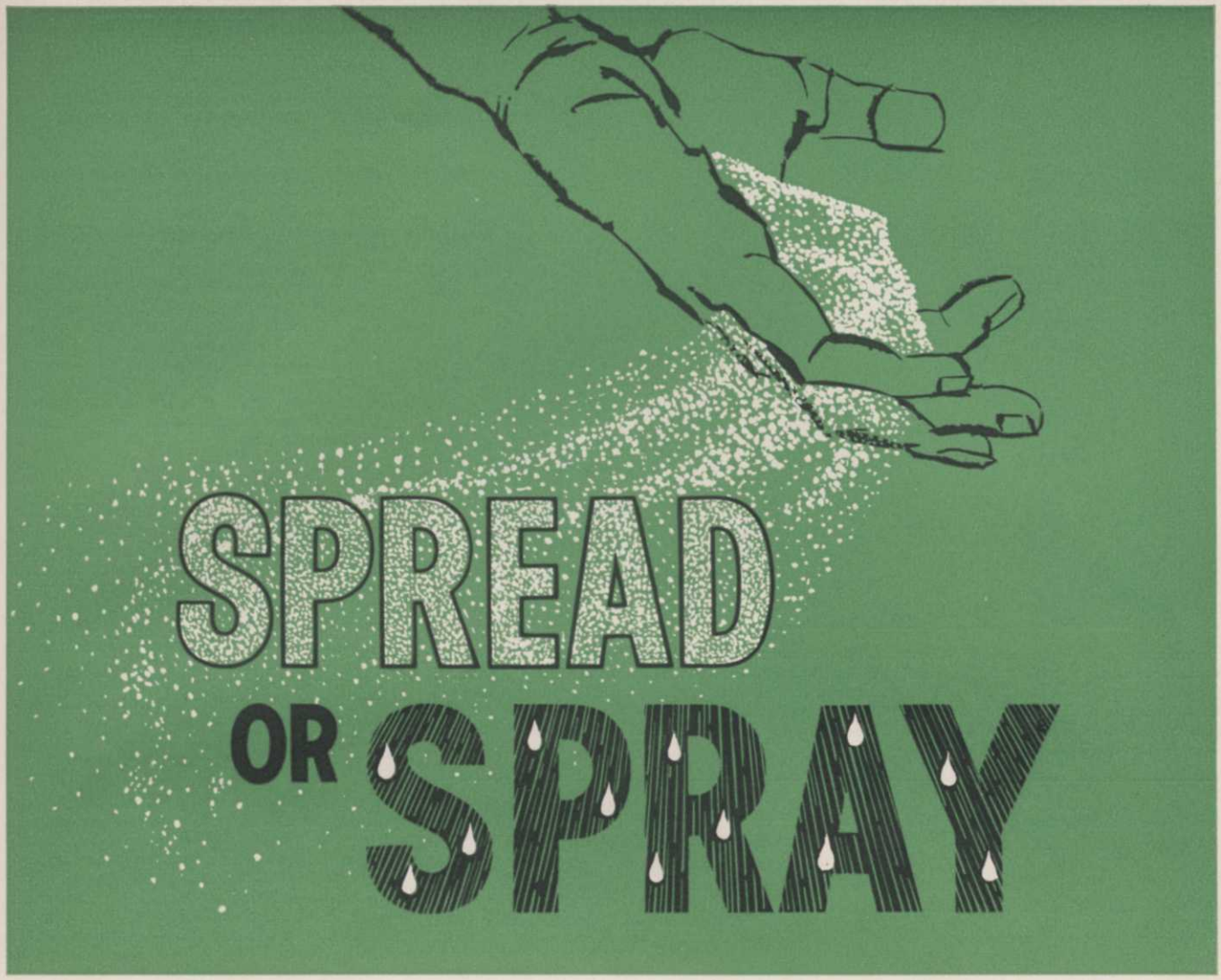
Bartlett's laboratories are devoted to research into fundamental problems of entomology, pathology, and physiology that affect shade and ornamental trees and shrubs.

New Soil Fumigant Book from MC

Instructions for using Michigan Chemical's Pestmaster Soil Fumigant-1 are contained in a new brochure now available from the firm.

Included are discussions on using the chemical on seed beds, plant beds, golf greens, and lawns.

Copies of the illustrated brochure are available to contract applicators who write the company at St. Louis, Mich.



Kill all weeds and grasses either way with these powerful new herbicides from Chapman

WEED-FREE G *for dry application*—Applied dry in delivered form, by hand or with mechanical equipment. Contains Diurion, trichlorobenzoic acid (TBA) and sodium trichloroacetate (TCA) • Effective on all broad and narrow leaf weeds and grasses and woody vines • Excellent for spot treatment • Use in Spring, Fall and Winter.

NO-VINE *for controlling vines*—Applied dry in delivered form, by hand or with mechanical spreader • Contains granular form of 2, 3, 6 trichlorobenzoic acid • Kills top growth and root systems • Particularly effective on bindweed and other woody vines • Low application rate, long residual effect make No-Vine particularly economical.

WEED-FREE S *for spray application*—Wettable powder for application with mechanical or hand spraying equipment • Contains Diurion, Dalapon, and 2,4-D • Knocks down all weeds and grasses quickly; use during growing season • Non-corrosive to metal spraying equipment • Powerful . . . dependable . . . economical.

WEED FREE AEROSOL BOMB *ready-to-use pressurized spray*—Sell this convenient aerosol weed-killer for extra profits • Perfect for edging, trimming, and spot treatment of weed patches • Contains 3% Pentachlorophenol • Turns vegetation brown in only a few hours • E-Z Applicator extension wand makes it easy to use.

Chapman also distributes other weed control products from leading chemical manufacturers

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Please send me more information on Chapman herbicides.

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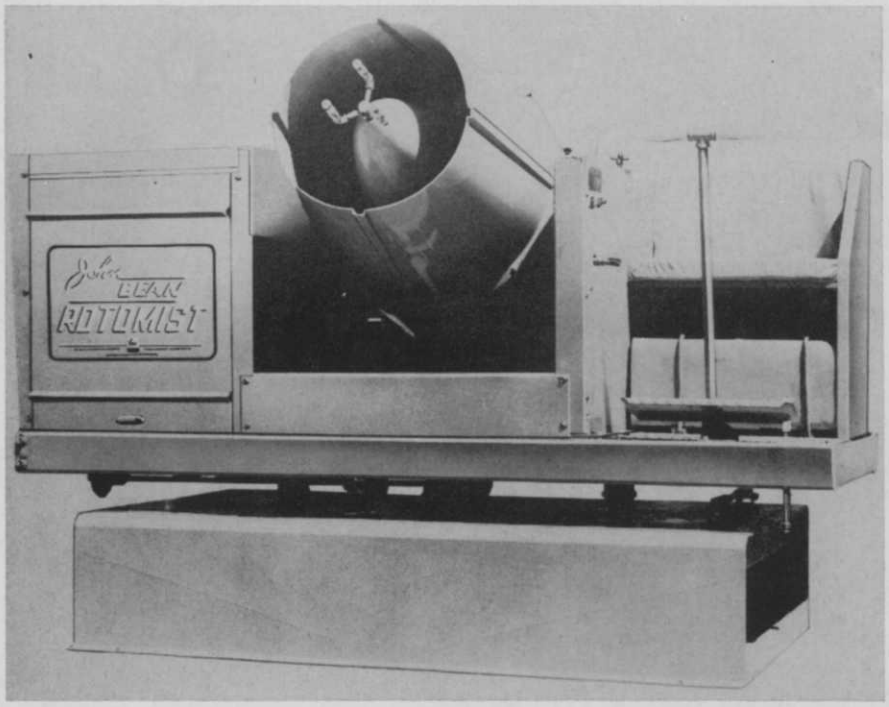


John Bean's new line of Rotomist Sprayers includes models that can be tailored to any need, company spokesmen say. For both shade tree and mosquito spraying, Bean recommends the Model 91 Rotomist (above). These units can handle virtually any spraying job including those where high pressure is needed, the firm claims. A new Rotomist catalog containing specifications on the complete John Bean Rotomist line, as well as information on Dutch Elm Disease control, is available to PCOs on request. Write John Bean Div., FMC Corp., Lansing, Mich.

WWCC Appoints Bus. Mgr.

Need for a permanent contact and organizational point has prompted the Western Weed Control Association to appoint a business manager. Edward J. Bowles, Pennsalt Chemical Corp., Fresno, currently fills the post.

Membership dues for 1963 will be $3 per year, Bowles told *Weeds and Turf*, for which members receive all publications of the conference, the Proceedings, which is issued in alternate years, and the annual Research Progress Report.

Proceedings from the last meeting are now available from the business manager for $2 each. Bowles' address in 3239 Mayfair Blvd., Fresno, Calif.

Next meeting of the Western Conference is March 19-21 in Portland, Ore.

Texas CA is Supplier Too

Appointment of the Agricultural and Industrial Spray Equipment and Supply Co., Hallsville, Tex., as distributors for Amchem chemicals and John Bean equipment was announced recently when the new firm, called "AISESCO," opened its doors for the first time.

Owner-operator of the new firm, T. O. Bell, said he will distribute herbicides in East Texas and will specialize in custom spray application to utility rights-of-way. Also featured will be a complete line of spray equipment, including high pressure sprayers from the John Bean Division, FMC, Lansing, Mich.

Amchem's "Weedone" products, including several industrial weed killers, lawn chemicals, and aquatic herbicides, will also be carried.

AISESCO has its office building at 109 West Main Street in Hallsville, where Don L. Knoll, sales manager, and other company officials are located.

Gowell Is Dow Lawn Manager

James H. Gowell has been promoted to manager of lawn and garden products sales for the Dow Chemical Co., according to W. W. Allen, sales manager, agricultural chemicals department.

Gowell will be responsible for marketing Dow Crab Grass Killer, Dowpon, Dowpon Grass Killer Bar, and Novege all purpose weed and grass killer.

He succeeds Richard T. Williams who has transferred to Dow's Los Angeles, Calif., office.

Trimmings

"*It's a phenomenally dry* year all over," was the comment from Diamond Alkali's Ed Chandler when he phoned our offices the other day. Dr. Chandler is well known to many applicators because his position as head of Diamond's technical service takes him all over the country and to virtually all the major conferences. We benefit greatly from Ed's first-hand experience, and were glad to talk with him when he rang us up. "It's so dry the efficacy of pre-emergent herbicides has been noticeably impaired," the veteran scientist told us. "Some places are having less rain than they've had for years." Thanks for the tip, Ed, which we pass on here for any CAs who've had trouble this year because of a lack of surface moisture in the ground they're treating.

* * *

From Viet-Nam comes word that the latest military development in that sweltering outpost is a weed killer used against undergrowth. Seems this cuts down on cover available for enemy controls, and puts the CA in a position of military strategist! We're more than optimistic about the prospects of our industry, but this new weapon, in a day of orbiting spacecraft and talk of holes in the Van Allen Belt, sounds somewhat less than practical.

* * *

***Word is around that* friend-of-the-industry Dr. Buford Grigsby of Michigan State is off to Ceylon for further work on brush and weed control. Dr. Grigsby is widely known as one of the pioneers of chlordane for crabgrass control, and is a familiar personality to CAs everywhere, all of whom have benefited from the scientist's valuable research. Here's wishing the Michigander a successful stint in the East, and we'll all look forward to welcoming him back Stateside soon.**

* * *

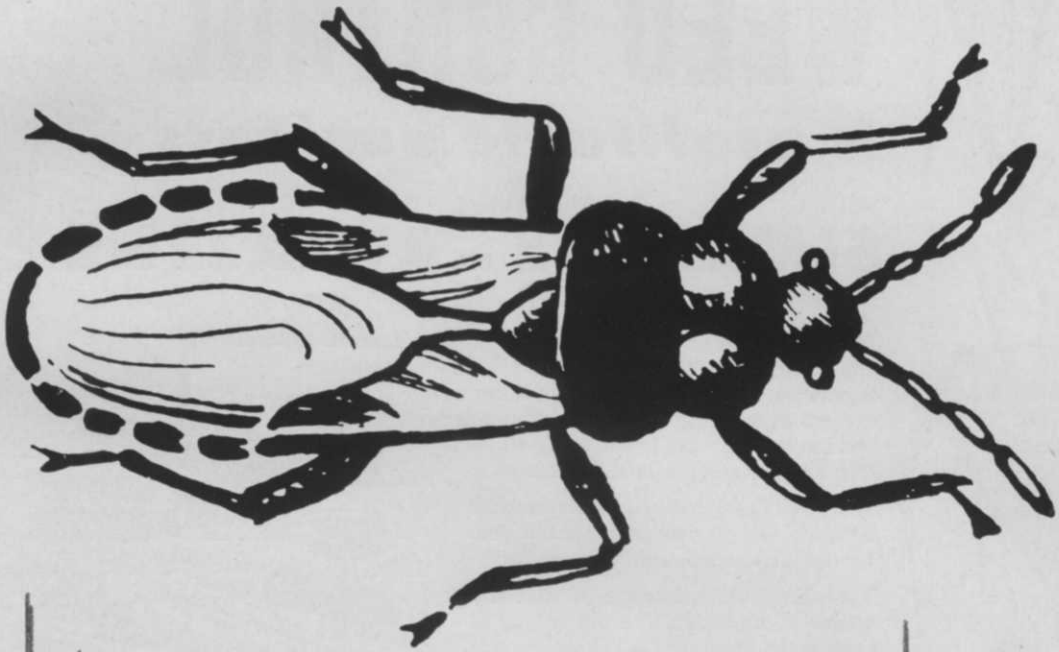
In Sharon, Pa., an enterprising nurseryman has imported a bevy of geese from Missouri to do his weeding! This grower of ornamentals says he'll save quite a bit of money by using the quacking fowls instead of the customary means for getting rid of unwanted vegetation. In this case, even if the "quacks" are from Missouri, they'll have to *show us*!

* * *

***Another weed researcher* off for distant parts is Purdue's Dr. B. J. Rogers, a professor of botany at the Lafayette, Ind., school. Dr. Rogers is in Hawaii, doing research on 2,4-D. It'll be a far cry from Lafayette's cold winters, and we expect Dr. Rogers will enjoy the contrast.**

* * *

***Bill's not dormant.* VPI researcher Dr. Bill Chappell, known to many through his work on dormant cane control, has another feather in his cap, we were told recently. Seems VPI has enlarged Bill's staff, and made the Virginian head of a separate division. We're glad to learn of this advance in an already noteworthy career.**



How do you measure destruction?

CHINCH BUGS are a mere one-quarter-inch long, yet the destruction they do to lawns, parks, and fairways is immeasurable. These white-winged pests inflict their damage at the base of the grass by sucking juices from the stem, causing turf to turn brown and die. ETHION SAVES LAWNS. This powerful insecticide gives outstanding results in wiping out destructive chinch bugs. Actual use tests show one application provides total control. What's more ethion is safe, easy-to-use and economical. Is also U.S.D.A.-approved to curb sod webworms, halt mites in Bermuda grass. Write or call your supplier today for details.

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Many PCO's depend upon Simazine and Atrazine, Geigy's outstanding herbicides, for industrial weed control.

These herbicides can be used to eliminate almost all vegetation. One timely application, according to label directions, controls annual and perennial weeds for a full season or more. Simazine and Atrazine are safe to humans and animals, non-irritating to skin, non-flammable, non-corrosive and dependable in the results they provide.

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Roads, paths, industrial plants, sidings, race tracks, parking lots, around billboards, tennis courts, playgrounds, drive-in-theatres, firebreaks, fence rows, utilities, lumber yards, oil tanks, water works, and many, many other sites in your service area.

For free 12 page, full-color brochure on Industrial Weed Control, address Department PC-2.

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